

**REMARKS**

Claims 1-17 and 21-26 remain in this application. Claims 18-20 have been withdrawn as being directed to a non-elected species. Applicant reserves the right to pursue the withdrawn claims in a continuation and/or divisional application.

**I. CLAIM REJECTIONS UNDER 35 U.S.C. § 102.**

Claims 1, 4, 14-15, 23, and 25 are rejected under 35 U.S.C. § 102(e) as being anticipated by Renau (US 6,635,880). Withdrawal of this rejection is respectfully requested for at least the following reasons.

***Claim 1 recites a mass analyzer comprised of a first permanent magnet and a second permanent magnet, which is not taught by Renau.***

Claim 1, and claims 4, and 14-15 by dependency, employ first and second *permanent magnets*, whereas Renau employs only *electromagnets*. Renau does teach a resolving magnet 22, but it does not employ permanent magnets as recited in claim 1. Renau teaches a mass analyzer 20 comprising a resolving magnet 22 and a mask 24. (column 3, lines 33-36). The resolving magnet 22 comprises polepieces 22a and 22b. (column 3, lines 59-61). FIG. 6 of Renau illustrates a cross section of the resolving magnet wherein polepieces 22a and 22b are separated by gap 72 through which a ribbon ion beam 12 passes. (column 6, lines 9-12). The magnet 22 further includes coils 200 and 202 through which current passes to generate magnetic fields. (column 6, lines 12-18). Therefore, Renau only teaches employing *electromagnets* and does not teach employing first and second *permanent magnets* in a mass analyzer and, therefore, does not anticipate claims 1, 4, and 14-15.

As discussed in Applicant's specification, electromagnets require substantial power to generate sufficiently large magnetic fields, which can make employment of electromagnets unfeasible. (page 3, lines 6-10). Additionally, it is difficult for conventional electromagnet based mass analyzers to provide a substantially uniform

magnetic field in a relatively small space. (page 6, lines 3-6 and page 9, lines 12-24). Therefore, the electromagnets taught in Renau are unable to generate the substantially uniform magnetic field as claimed.

Accordingly it is requested that this rejection of claims 1, 4, and 14-15 be removed.

***Claim 21 recites selecting a species and rejecting other species of the multiple species of the ion beam via a permanent magnet based mass analyzer.***

Although not specifically stated, it is assumed that the Examiner intended to include claim 21 in this rejection. Claims 21, and 23 and 25 *via* dependency, include selecting a species via a permanent magnet based mass analyzer. As stated above, Renau only discloses employing electromagnets 22a and 22b along with a mask 24 for a mass analyzer 20. (column 6, lines 9-12). Renau fails to teach selecting a species and rejecting other species via a permanent magnet. As a result, Renau does not anticipate claims 21, 23, and 25.

Furthermore, claim 25 includes applying a magnetic field via permanent magnets that deflects the ion beam across its short dimension. Renau only describes generating a magnetic field in polepieces 22a and 22b by current through coils 200 and 202 and does not disclose applying a magnetic field via permanent magnets. Accordingly, it is requested that this rejection of claims 21, 23, and 25 be removed.

## **II. CLAIM REJECTIONS UNDER 35 U.S.C. § 103.**

Claims 2, 5, 9-13, 16-17, 22, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Renau (US 6,635,880) and Sugitani et al (US 6,573,517). Withdrawal of this rejection is respectfully requested for at least the following reasons.

***Renau fails to disclose the claimed invention.***

The Office Action states that Renau discloses the claimed invention except for a post accelerator. Applicant has demonstrated that this is not the case as shown above and respectfully reiterates the arguments above with regards to claims 1 and 21. Claims 2, 5, 9-13, 16-17, by their dependency from claim 1, employ first and second *permanent* magnets which Renau does not teach. Claims 22 and 26, by their dependency from claim 21, employ selecting a species *via* a *permanent* magnet based mass analyzer, which Renau also does not teach.

Sugitani et al merely suggest extracting ions with a relatively high extraction voltage and decelerating them down to the desired energy by a reverse electric field. Sugitani et al do not teach the acceleration system that accelerates or decelerates the ion beam as in claim 2. Furthermore, Sugitani et al do nothing to cure the identified deficiencies of Renau. Accordingly, withdrawal of this rejection of claims 2, 5, 9-13, 16-17, 22, and 26 is respectfully requested.

### **III. CLAIM REJECTIONS UNDER 35 U.S.C. § 103.**

Claims 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Renau (US 6,635,880) as applied to claim 1 and further in view of Veneklasen et al (US 4,695,773). Withdrawal of this rejection is respectfully requested for at least the following reasons.

#### ***Renau fails to disclose the claimed invention.***

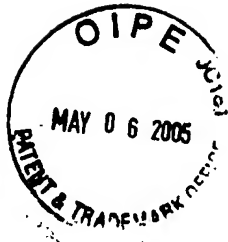
The Office Action states that Renau discloses the claimed invention except for a triode extraction system. Applicant has demonstrated that this is not the case as shown above and respectfully reiterates the arguments above with regards to claims 1 and 21. Claim 3, by its dependency from claim 1, employs first and second *permanent* magnets which Renau does not teach. Veneklasen et al fail to cure the deficiencies of Renau. Accordingly, withdrawal of this rejection for claim 3 is respectfully requested.

**IV. CLAIM REJECTIONS UNDER 35 U.S.C. § 103.**

Claims 6-8 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Renau (US 6,635,880). Withdrawal of this rejection is respectfully requested for at least the following reasons.

The Office Action states that these are art recognized result-effective variables. These claim limitations indicate dimensions and values particular to the claimed invention, which Applicant has shown are not be taught by the cited references, particularly Renau. Therefore, the limitations in claims 6-8 and 24 would not be obvious in view of Renau's disclosure.

Furthermore, Applicant has demonstrated that Renau does not anticipate claims 1 and 21, from which claims 6-8 and 24 depend, as shown above and respectfully reiterates the arguments above with regards to claims 1 and 21. Claims 6-8, by their dependency from claim 1, employ first and second *permanent* magnets which Renau does not teach. Claim 24, by its dependency from claim 21, employs selecting a species *via a permanent* magnet based mass analyzer, which Renau also does not teach.



Serial No. 10/669,186  
Page 10

**V. CONCLUSION**

For at least the above reasons, pending claims currently under consideration are believed to be in condition for allowance and notice thereof is requested.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, EATNP139US.

Respectfully submitted,  
ESCHWEILER & ASSOCIATES, LLC

By

Thomas G. Eschweiler  
Reg. No. 36,981

National City Bank Building  
629 Euclid Avenue, Suite 1210  
Cleveland, Ohio 44114  
(216) 502-0600

**CERTIFICATE OF MAILING (37 CFR 1.8a)**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: May 3, 2005

  
Christine Gillroy